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IN THE SPECIFICATION:

Paragraph beginning at page 1, line 15 has been amended as follows:

Massage machines are already in wide use which are adapted to automatically give a massage to the user. With reference to FIG. 1, such a massage machine comprises a chair body 10 including legs 11, seat 12, backrest 13 and a pair of opposite armrests 14, 14, and a massage mechanism 2 having a plurality of therapeutic members 21 and incorporated into the body 10. The therapeutic members 21 are reciprocally moved up and down while being vibrated, whereby the human body is massaged.

Paragraph beginning at page 4, line 4 has been amended as follows:

Additionally the conventional massage machine requires that the person to be massaged wear a plurality of sensors for measuring the pulse, body temperature, skin electrical resistance, etc., consequently making the person feel psychologically burdened and entailing the problem of failing to afford reliable measurement data. [[Since]] Because the sensors have respective signal lines connected thereto and restraining the movement of the person to be massaged, there is another problem that the person cannot be massaged in a relaxed state.

Paragraph beginning at page 4, line 14 has been amended as follows:

A first object of the present invention is to provide a massage machine which is capable of ~~giving~~ providing an effective massage in conformity with the purpose.

Paragraph beginning at page 5, line 7 has been amended as follows:

The massage movement adjusting means comprises mode changeover means for switching between a relaxation mode and a refreshment mode, the massage movement is [[so]] adjusted so as to lower the activity of the autonomic nervous system in the relaxation mode, and the massage movement is [[so]] adjusted so as to increase the activity of the autonomic nervous system in the refreshment mode.

Paragraph beginning at page 5, line 14 has been amended as follows:

With the massage machine of the present invention, a preliminary massage operation is performed first to estimate the psychological state of the person to be massaged, and a full massage operation is thereafter performed. For the full massage operation, the massage movement is adjusted according to the result of estimation of the psychological state. In performing the full massage operation, the mode can be switched by the person to be massaged between the relaxation mode and the refreshment mode. When the relaxation mode is selected, an adjustment is made for reducing the activity of the autonomic nervous system, for example, an adjustment is [[so]] made so as to prolong the massage time for the part that feels comfortable, whereby an improved degree of relaxation is available. When the refreshment mode is selected, on the other hand, an adjustment is made to increase the activity of the autonomic nervous system, for example, an adjustment is [[so]] made so as to prolong the massage time for the part

where both comfort and pain are perceived as the unique sensations to be experienced when stiff parts are massaged. This produces a high degree of refreshment.

Paragraph beginning at page 7, line 16 has been amended as follows:

Stated more specifically, the control circuit [[gives]] provides different kinds of massages to a plurality of parts of the person to be massaged in the preliminary massage operation to estimate the psychological state of the person for each kind of massage given to each part, and adjusts the massage movement for each kind of the massage to be given to each part, according to the result of estimation of the psychological state, whereby the person is massaged effectively at the respective parts in conformity with his or her preference and condition.

Paragraph beginning at page 8, line 4 has been amended as follows:

Further stated specifically, the massage operation is executed by a sequence of massage movements, and the massage movement adjusting means of the control circuit comprises time adjusting means for adjusting the time required for a predetermined number of massage movements so as to complete the sequence of massage movements within approximately the same period of time whether the relaxation mode or the refreshment mode is selected. For example, suppose the relaxation mode is selected, and the massage time of a certain massage movement is then extended, or suppose the refreshment mode is selected, and the massage time of a certain massage movement is then shortened. Even in such cases, the time required for a

sequence of massage ~~movement~~ movements in the relaxation mode becomes approximately the same as is required for a sequence of massage ~~movement~~ movements in the refreshment mode. Thus, the same massage effect is available whether one mode or the other mode is selected.

Paragraph beginning at page 8, line 21 has been amended as follows:

Thus, the user of the massage machine of the present invention can be massaged effectively in conformity with the contemplated purpose.

Paragraph beginning at page 9, line 19 has been amended as follows:

The massage machine of the present invention described first executes the preliminary massage to estimate the psychological state of the person to be massaged, and thereafter performs the full massage operation wherein the massage movement is adjusted in accordance with the estimated psychological state. The machine is therefore adapted to perform a massage operation fully reflecting the psychological state of the user, thus achieving a high massage effect. The psychological state estimated by executing the preliminary massage is stored in a storage means such as a memory, and the stored psychological state is read from the storage means in performing the full massage operation for the adjustment of massage movement.

Paragraph beginning at page 10, line 10 has been amended as follows:

The user of the massage machine of the present invention can be effectively massaged in accordance with his or her psychological state.

Paragraph beginning at page 11, line 22 has been amended as follows:

With the electronic device of the present invention provided with the controller, the operator grasps the controller by one hand or both hands, whereby the grasping hand is brought into contact with the living body information sensor or sensors arranged on the casing to detect the living body information of the operator. The living body information detected is sent to the device body as control signals. The control circuit of the device body in turn estimates the psychological state of the operator based on variations in the living body information and controls the operation of the device in accordance with the estimated psychological state. Thus, the living body information of the operator can be detected merely by grasping the controller with one hand or both hands in manipulating the device in the usual manner. The operator is therefore free from metal burden or will not feel restrained, or the device will not make the operator feel ill at ease. Consequently, the living body sensor or sensors afford measurement data of high reliability.

Paragraph beginning at page 12, line 18 has been amended as follows:

The electronic device having the controller and embodying the present invention makes it possible to control the operation of the device in accordance with the psychological state of the operator and also to accurately measure the factors indicating the psychological state of the operator.

Paragraph beginning at page 13, line 2 has been amended as follows:

FIG. 1 is a perspective view of a massage machine of the present invention during use;

FIG. 2 is a rear view showing the construction of the massage mechanism;

FIG. 3 is a rear view showing the construction of a therapeutic member drive device;

FIG. 4 is a block diagram showing the construction of a control system of the massage machine;

FIG. 5 is a perspective view showing the appearance of a remote controller;

FIG. 6 is a view showing an exemplary representation on a display of the remote controller;

FIG. 7 is a flow chart showing a preliminary massage procedure;

FIG. 8 is a flow chart showing a full massage procedure;

FIG. 9 is a relationship chart for use in estimating psychological states from variations in living body information in a detection sequence;

FIGS. 10(a) and 10(b) are charts showing rules for altering the massage time and the massage speed in accordance with the mode and the psychological state in full massage operation;

FIG. 11 is a chart for illustrating the relationship between variations in living body information and psychological states;

FIG. 12 is a table showing the result of an experiment for substantiating the reasonability of the chart of FIG. 11;

FIG. 13 is a graph showing a distribution of psychological states with GSR variations and skin temperature variations plotted as coordinate axes;

FIG. 14 is a graph showing a distribution of psychological states with GSR variations and pulse rate variations plotted as coordinate axes;

FIG. 15 is a table showing a sequence of massage movements and time adjustment in a relaxation mode;

FIG. 16 is a plan view of a horizontal remote controller;

FIGS. 17(a) and 17(b) are a plan view and a sectional view of a finger knob attached to the remote controller;

FIGS. 18(a) and 18(b) are a plan view and a rear view of a remote controller of the game machine type; and

FIG. 19 is a perspective view showing the rear side of the remote controller.

Paragraph beginning at page 15, line 4 has been amended as follows:

With reference to FIG. 1, the massage machine of the present invention comprises a chair body 10 including legs 11, seat 12, backrest 13 and a pair of opposite armrests 14, and a massage mechanism 2 having a plurality of therapeutic members 21 and incorporated into the chair body 10. The machine [[gives]] provides a massage to the human body by reciprocatingly moving the therapeutic members 21 up and down while vibrating these members 21.

Paragraph beginning at page 18, line 1 has been amended as follows:

The other electrode 51a of the GSR sensor 51 is slidable upward or downward, such that the controller can be in intimate contact with the palm with good stability at all times regardless of the size of the hand which differs from person to person. [[Since]] Because variations in the area of contact of the electrodes of the GSR sensor 51 with the skin produce noise, at least one electrode 51a is made slidable to effectively suppress the noise due to variations in the contact area. The pulse sensor 52 and the skin temperature sensor 53 can also be made movable. To ensure a rapid response to mental loads, it is useful to make such a contrivance [[as]] to reduce the thermal capacity of the skin temperature sensor 53 [[as]] by providing a hollow portion below the portion where it is mounted. As seen in FIG. 6, the part being massaged, degree of stiffness, degree of comfort, position of the stiff part, etc. are to be shown in the display 71 of the remote controller 7.

Paragraph beginning at page 20, line 7 has been amended as follows:

As the psychological states of the user in the event of such variations in the living body information, it is speculated that the user is in a relaxed, comfortable state when the degree of activity is low, or that the user feels such a unique sensation as is experienced when massaged at a stiff part, feeling both pain and comfort as mingled therewith, when the degree of activity is slightly high, or that the user feels a pain when the degree of activity is high. When the degree of activity is neutral, the user will presumably be in a neutral state, feeling neither comfort nor pain.

Paragraph beginning at page 22, line 16 has been amended as follows:

The preliminary massage operation is performed by the procedure shown in FIG. 7. ~~Waveform~~ A waveform is received from the GSR sensor to inquire whether the waveform, for example, resulting from release of the hand from the sensor is found abnormal in step S1. If the answer is affirmative, "abnormal" is displayed in step S2. When the waveform is found normal, step S3 follows for noise removal processing. The sequence then proceeds to step S4 to detect variations of GSR in each phase section (each massage movement). Slope can be detected, for example, by calculating the slope of GSR variations by least square approximation.

Paragraph beginning at page 23, line 5 has been amended as follows:

Further in step S5, waveform is received from the skin temperature sensor and checked for abnormality. If it is found abnormal, "abnormal" is displayed in step S6. When the

waveform is found normal, step S7 follows for noise removal processing. The pulse rate is then detected in step S8. The sequence then proceeds to step S9 to detect variations of pulse rate in each phase section. Slope can be detected, for example, by calculating the slope of pulse rate variations by a least ~~square~~ squares approximation.

Paragraph beginning at page 24, line 7 has been amended as follows:

Subsequently, step S15 of FIG. 7 displays on the remote controller the result of judgment of the psychological state in each phase (each massage movement). After repeating steps S4, S9, S13, S14 and S15 a number of times for the repetitions of all the phases, the sequence proceeds to step S16, in which an overall "feeling of stiffness" is judged from the results of judgment in all phases, and the result is displayed on the remote controller to complete the procedure. The result of judgment in each phase is stored in a memory incorporated in the control circuit.

Paragraph beginning at page 25, line 9 has been amended as follows:

FIGS. 10(a) and 10(b) show rules for adjusting the massage time and the massage speed in accordance with the psychological state in the relaxation mode and the refreshment mode, respectively. For example, when the psychological state is estimated to be "relaxed" in the case where the relaxation mode is selected, the massage time for the parts other than the back is extended, with the massage speed held at medium level. The particulars for others are as listed in FIG. 10(a). In this way, an improved degree of relaxation will be achieved.

Paragraph beginning at page 26, line 4 has been amended as follows:

Time adjustment is made so that the duration of the sequence of massage movements will not be changed greatly by altering the massage time and massage speed. For example, in the case of the relaxation mode shown in FIG. 15, altered first are the massage time and the massage speed of the variable portions included in the massage movements No. 1 to No. 55 indicated by arrows A. The time required for the movements No. 1 to No. 55 after the variable portion alterations is calculated, and the required time is subtracted from the variable portion default time (520 sec) to calculate the time difference indicated by arrow B.

Paragraph beginning at page 26, line 15 has been amended as follows:

In the case where the time difference is not smaller than 120 sec, this time difference is divided by 4 to calculate the lengths of time for the four variable portions involved in the massage movements No. 56 to No. 71. However, the quotient resulting from the division by 4 is taken as an upper limit to avoid excessive time after the alteration. Alternatively, if the time difference is at least 60 sec to less than 120 sec, the massage movements No. 56 to No. 71 are effected with the default value. If the time difference is less than 60 sec, the massage movements No. 56 to No. 71 are each performed for 20 sec. Time adjustment can be made similarly also in the refreshment mode.

Paragraph beginning at page 27, line 19 has been amended as follows:

An inquiry is thereafter made in step S26 as to whether the remaining time ΔT is not smaller than 0. When the answer is affirmative, step S27 follows to alter the time of each variable-portion phase so that the sum of lengths of time of the variable-portion phases approximates ΔT. If the answer to the inquiry of step S26 is negative, the sequence proceeds to step S28. [[Since]] Because the total time of the current mode is already exceeded by the variable portions and the core portions, the time of each variable-portion phase is altered by a variation of shortest value in this step. The processing for altering the time of the current mode is completed in step S29, followed by step S30 to start a modified sequence of massage movements in the current mode.